T-12: Adopting the Zero Emission Vehicle Part of the California Vehicle Emission Standards

Background:
Since California regulated automobile emissions prior to the federal government, they exercised their legal right to develop their own emission standards. Other states are allowed to "opt-in" to the California standards and the Washington State did so in 2005. The first vehicle models that must meet CA emission standards are 2009 model year cars and light trucks. CA emission standards are typically more stringent than EPA standards. While, the EPA did not allow California's ground-breaking GHG emission standards (a.k.a. Pavley standards), due to litigation and elections, its likely those GHG standards will take effect before long.

When the Washington legislature adopted the CA emissions standards with ESHB 1397, they chose not to adopt the Zero Emission Vehicle (ZEV) part of the requirements. The main result of this choice is that manufacturers do not have to supply any of the advanced technology zero emission vehicles (ZEVs) in Washington.

The base CA ZEV requirement is that by 2018, 16% of the vehicles sold in CA by major auto manufacturers must be ZEVs. Because no "mass market" ZEVs (affordable vehicles with customary range, speed, & refueling capability) are expected to be viable for a number of years, CA allows the 16% requirement to be met primarily by substituting large numbers of "partial ZEVs" until 2018. These "substitutes" can be ultra clean gasoline vehicles, hybrid electric vehicles, and neighborhood electric vehicles (limited speed & range). Fewer numbers of "true ZEVs" (full electric or fuel cell) would be required.

The 2020 GHG-reduction calculated for the 2007 CAT from adopting the ZEV standards was relatively small because by 2020 only a small number of true ZEVs would have filtered into the fleet, the ZEV substitutes still have some GHG emissions, and by 2020 the substitutes are mostly replacing lower emitting vehicles. Benefits continue to increase after 2020.

Current Status:
CA is just now finalizing amendments to its ZEV requirements to create a whole new category and credits for "plug-in hybrid" vehicles, which are now expected to become available as early as 2010 from some manufacturers. The earlier 2003 ZEV rules from were based on the historic lack of breakthroughs in battery technology and the expectation that fuel cells would become viable.

Under revised rules, the 16% ZEVs by 2018 requirement remains. The main issue is what will be required between now and 2018 when large scale substitutions of ultra-clean gasoline vehicles and hybrids are still allowed. The answer is that between 2012 and 2018, if a manufacturer maximizes their use of substitution credits, 2.2% to 3% of their sales would be "plug-in hybrids", in addition to regular hybrids and ultra clean gasoline

vehicles. Maximum use of allowed substitutions for true ZEVs would result in the following distribution of clean vehicles:

Vehicle Types:	2012-14	2012-14 Num of Veh	2015-17
PZEV (ultra clean gasoline)	6%	16,800	6%
AT-PZEV (hybrids, natural gas)	3%	8,400	2%
Enhanced AT-PZEV or NEV (plug-in hybrids)	2.19%	6,132	3%
Pure ZEV (full electric or fuel cell)	.81	[2,268]*	3%
Total ZEV Obligation:	**12%**	**33,600**	**14%**
Total WA new vehicle sales		280,000	
* in 2012-14 these vehicles are only required to be sold in CA, but the credits apply as if they were sold here. Market conditions may bring some to WA anyway. After 2014, many more than 2,268 could come to WA.			

Benefit of Washington adopting the ZEV requirements:
The main benefit of adopting the ZEV requirement is that manufacturers would be required to deliver a large number of plug-in hybrids to the state within the next few years. The table shows that as the "Enhanced AT-PZEV" targets. Deliveries and GHG benefits would start in 2013, if the legislature acts in 2010.

If we don't have the ZEV requirements, plug-in hybrid electrics will first be delivered to states that do have these requirements. Since costs for these advanced technologies will likely be higher than for conventional vehicles, without ZEV, it's unlikely Washington will receive plug-in hybrids or full electric vehicles until much later than other "opt-in" states -- even if customers want them.

While plug-in hybrids are expected to be largely re-charged at home, if they start entering Washington in large numbers, additional recharging infrastructure will be developed at places of work, retail and food outlets, and popular recreation venues. Having this infrastructure in place will greatly improve the marketability of plug-in hybrids and full electric vehicles and ensure that they are sold here as early as possible.

The ZEV requirement will also make it more likely that recent innovations such as "system approaches" designed around leased electric vehicles and batteries would be introduced into Washington. This leasing approach averages the high battery costs with the low electricity cost to create an affordable lease that could bring tens of thousands of electric vehicles into the area rapidly.

New technologies create new jobs. The infrastructure development and innovative systems associated with electric vehicles can generate good "green" jobs for Washington.

The 2007 CAT report indicates a net benefit of .1 mmt from application of the ZEV requirements. That regulatory benefit will remain the same. However, high demand for

popular plug-ins could result in exceeding the minimums while getting any advanced electric vehicles is much less likely without the base requirements.

In the long run, the base requirement that 16% of new sales must be true zero emission vehicles will apply. California's history of providing substitutes and alternative paths simply recognizes the need for development and transitions. The surest way for Washington to benefit from true ZEVs will be to adopt the requirements now, so manufacturers can reasonably phase in supplies to Washington. There is no way manufacturers can get from no ZEVs to 16% ZEVs all at once. The ZEV requirement is the transition path.

The short-term benefit is focused on getting the plug-in hybrids. Full electric vehicles are treated differently. The regulations incentivize the more expensive full-electrics being placed in California. Depending on market conditions and how manufacturers comply with California requirements, full electrics are most likely to start arriving in Washington in 2015. If costs allow, some may arrive in the 2012-2014 period.

Recommendation:
The 2007 CAT report recommended opting in to ZEV requirements in 2010. The TIWG endorses this recommendation. If the legislature adopts ZEV requirements in 2010, they would be effective for 2013 model year vehicles (fall of 2012). That would be only one year after the earliest possible adoption; benefits would still be very worthwhile.